Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FCC 92-438

In the matter of	)	
Advanced Television Systems	)	
and Their Impact upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

COMMENTS OF ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC.

Respectfully submitted,

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SERVICE TELEVISION, INC.

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January 7, 1993

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The Association for Maximum Service Television, Inc. ("MSTV") hereby files comments to the Memorandum Opinion and Order/Third Report and Order/Third Further Notice of Proposed Rulemaking, FCC 92-438, released in the above captioned docket on October 16, 1992 ("Notice").[1/]

SUMMARY

The Commission must provide ATV broadcasters with the flexibility to incorporate new ATV technologies and services as they become available. Insofar as neither the Commission nor the broadcast industry knows with any certainty at this point what the future holds, MSTV supports the Commission's decision not to promulgate a definition of "ATV programming" until sufficient information regarding the complete potential of ATV programming is available. A premature, unduly narrow definition of "ATV programming" could unnecessarily preclude broadcasters from implementing the most

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1/ MSTV is a trade association of approximately 250 local broadcast television stations committed to achieving the highest technical quality feasible for the local broadcast system.

recent technological developments and delivering new and beneficial services.

Likewise, the Commission should refrain from drawing premature distinctions between "primary" and "ancillary" uses of ATV television broadcast channels. As ATV broadcasting becomes a reality, broadcasters will need flexibility in order to maximize the opportunities created by such developments as interactive television and the integration or convergence of television and microcomputer technology.

Regardless of the precise type and nature of ATV programming that ultimately becomes available, ATV broadcasting cannot succeed if the general viewing public lacks access to receivers capable of receiving ATV broadcasts. The commercial viability of ATV broadcasting presupposes a viewing audience for ATV television programming. The Commission may err in simply assuming that if "broadcasters build it, they will come."

The Commission has determined that local broadcast ATV is in the public interest and that the local broadcast system must at some point convert to ATV transmissions. MSTV believes that the policy reflected in these determinations and in both the Communications Act and the All-Channel Receiver Act favoring the maintenance of a viable and universally available local broadcast system may compel the Commission to mandate universal ATV receiver capability at some juncture. Given the uncertainties in the current ATV development

marketplace, however, MSTV believes it appropriate for the Commission periodically to revisit the timing and implementation of adopting such requirement beginning at its first "reconsideration window" three years after adoption of an ATV standard.

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I. POLICIES PROMOTING MAXIMUM FLEXIBILITY IN THE FORMAT OF ATV TRANSMISSIONS AND USE OF THE ATV CONVERSION CHANNEL FOR ANCILLARY SERVICES WILL SERVE THE PUBLIC INTEREST.

Digital ATV technology has the potential of revolutionizing broadcast television, bringing new and innovative program formats and options to viewers, and creating new opportunities for broadcasters to develop additional revenue streams on their conversion channels. The Notice seeks comment on two closely-related issues that are critical determinants of the extent that ATV technology will realize this potential in the broadcast television service. First, the Notice seeks comment on the use of future digital compression techniques that would permit transmission of multiple ATV images on a single 6 MHz ATV conversion channel, and other future techniques that might provide for transmission of more than one ATV program service on a single ATV conversion channel. See Notice, at ¶¶ 58-59. Second, the Notice seeks comment on the technical feasibility and policy implications of permitting ancillary uses of the ATV conversion channel. See Notice at ¶ 77. In both of these critical areas, MSTV urges the Commission to proceed cautiously and, in the early years, to embrace policies promoting maximum flexibility in the implementation of ATV technology and development of ATV program services.

Though the process of developing an ATV transmission standard is nearing completion, important ATV-related technologies continue to emerge. Common compression syntaxes for video and audio applications are under development for

computing, telecommunications and media applications, that may offer ATV broadcast transmission systems greater flexibility and compatibility with other media.[1/] This will no doubt foster the development of new, innovative video program formats. Some early examples of innovative program formats have already surfaced.[2/] Though presented initially for transmission on cable television systems, there is no doubt

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[1/] See e.g., Standard development work of the Motion Picture Experts Group (MPEG) and related activities of committees and working parties of American National Standards Institute (ANSI), International Radio Consultative Committee (CCIR), and International Telegraph and Telephone Consultative Committee (CCITT) of the International Telecommunications Union. The formulation of the MPEG-2 standard began in November, 1991, primarily focusing on interlaced video applications (720x480 pixels, 2:1 compression at 4-10 megabits per second), but the scope of MPEG-2 has broadened considerably to include applications such as HDTV (with resolution of 1440x960 pixels with 2:1 compression at 15-20 megabits per second). Zdepski, Raychaudhuri, & Canfield, "MPEG-2: A Tutorial Overview," at 4, 8 (Dec. 2, 1992).

[2/] For example, Microsoft, Inc. has demonstrated a graphical user interface for consumer television applications, which anticipates the growth of a digital television transmission environment. Moreover, compression technology recently embraced by a major cable multiple system operator, TCI, has prompted the development of at least one interactive, multiplexed television program format -- Discovery Channel's Your Choice TV -- which purports to permit viewers to custom tailor their viewing from a base of 10 simultaneous audio/video transmission channels. See Lambert, "Discovery Pitches Network Digital Reruns on Demand," Broadcasting, Dec. 21, 1992, at 14; Discovery Communications, Inc., Press Release, "Discovery Communication, Inc. Unveils Nat'l Menu System for Delivery of Digital Compression Cable Servs.," at 1-4 (Dec. 11, 1992); Lambert, "TCI: $200 Million for Channel Expansion," Broadcasting, Dec. 7, 1992, at 4, 15; see also Lambert, "Cable Ponders Zenith's Digital 'Afterburner'," Broadcasting, Dec. 14, 1992, at 64-65 (discussing recent technical developments related to digital compression).

that they could be utilized in the ATV broadcast environment as well.[3/] FCC decisions as to the issues of flexibility in the definition of the ATV transmission standard, and the use of ancillary data capacity, will have a tremendous impact on whether, or to what extent, these formats will in fact be implemented for broadcast television viewers.

A. Defining "ATV Programming"

The Commission has correctly refrained from adopting a premature definition of "ATV programming" in the context of adopting simulcast rules, concluding that "to attempt to define what is or is not ATV programming at this time might lead [the Commission] to inadvertently prohibit some sources and formats of programs on ATV channels that would be highly desirable to viewers." Notice, at ¶ 47. However, the Commission has essentially raised this issue by implication in seeking comment on the issues of technical flexibility and ancillary services. In the absence of broad flexibility and discretion regarding the use of the compressed digital bit

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[3/] On December 23, 1992, Microsoft began distribution of the "Modular Windows Software Development Kit" which is designed to develop applications for interactive digital devices (multimedia CD-ROM platforms) that use televisions as a display. Microsoft anticipates that "the next hardware evolution is likely to be some type of receiver that plugs into consumers' televisions and delivers information on-line ..." See Microsoft, Inc., "Microsoft Backgrounder: Microsoft Modular Windows Operating System," at 12 (December 1992). This "receiver" in Microsoft's prophecy could very well be an HDTV broadcast television receiver, if ATV broadcast service is not unduly restricted by premature regulatory impediments.

stream in ATV transmissions, the Commission's rules on these subjects will inevitably result in constraints on the ability of programmers to innovate and to offer viewers new formats and enhanced options.

Fox has raised the issue of using digital compression to deliver multiple ATV images on a single 6 Mhz channel. Notice, at ¶ 58. The header/encryptor schemes now under development by digital ATV transmission system proponents are an important step in achieving this type of flexibility.[4/] This use of a compressed digital bit stream to deliver multiple programs on a single 6 Mhz channel is but one of many possibilities including interactive, user-selectable, scalable image formats and multichannel sound options. Use of these techniques may permit a single television broadcast channel to deliver simultaneously more than one full-motion image and multiple channels of audio to a "smart" television receiver. This type of technical flexibility would clearly be in the public interest, as it would permit the development of enhanced programming formats and viewer options.

The Notice raises the concern that too much flexibility in the use of ATV conversion channel might lead to ancillary uses predominating over primary uses of the channel.

[4/] See [Proponent submissions to the Technical Subgroup of the FCC's Advisory Committee on Advanced Television Service, "Special Panel" on proposed improvements (November 18, 1992)].

Yet, at the same time, the Commission is sensitive to the pressures to make intensive and efficient use of scarce electromagnetic spectrum. MSTV questions whether in the long-run the relative balance between ancillary and primary uses is a substantive concern provided that the channel is at all times fulfilling its function of providing access to broadcast services. In any event, the Commission has established, for the time being at least, simulcast rules which will ensure that broadcasting will remain a primary function of any ATV channel. Therefore, in the interest of encouraging innovation and diversity in programming, and maximum spectrum efficiency, the Commission should encourage the use of ATV channels for provision of any service not inconsistent with the primary use for the delivery of television broadcast service. This approach would serve the public interest in many ways, and would not unduly constrain broadcasters in developing innovative program formats and options, and secondary revenue streams.

B. Defining "Primary" and "Ancillary" Uses of ATV Channels

Just as the FCC has correctly concluded that it is premature to define "ATV programming," the FCC should not attempt to define precisely a distinction between "primary" use of the ATV channel and "ancillary" uses. Licensees should be encouraged to pursue innovative forms of program delivery through policies providing maximum flexibility, because the

traditional "bright lines" between primary uses and ancillary uses of the television broadcasting channel will be blurred in a digital environment and by the growing convergence of computer and television applications.[5/] For example, information that may be transmitted today as "ancillary" data by television stations may be integrated with primary transmissions in the future to form the basis of advanced television services.[6/] In this regard, while the prohibition against offering subscription service on the ATV channel would appear not to be an undue impediment to ATV development as it is currently phrased, the Commission should be careful not to sweep too broadly in defining prohibited services.[7/]

[5/] As the Notice mentions, the degree of compatibility between television services and microcomputer applications is growing, and this growth may promote new opportunities for television broadcasters to offer integrated services. Indeed, multimedia computing applications will full-motion video are being cross-marketed for both the computer environment and consumer television (CD-ROM and Compact Disc Interactive), and graphical user interfaces are being adapted for consumer television, and broadcast television is becoming an interactive medium. See e.g., Blackenhorn, "Comdex's Focus Widens as PCS Move Into Video," Electronic Media, Nov. 16, 1992, at 22; Blackenhorn, "Firms Test Interactive Video," Electronic Media, Nov. 16, 1992, at 22.

[6/] For example, a sports data ticker tape may be provided as both a distinct ancillary data service, or it may be integrated with live coverage of a sporting event, e.g., permitting the viewer to enjoy real-time updates of scores for other games in progress.

[7/] ¶ 75 of the Notice applies the prohibition against subscription service to use of the ATV channel for a stand-alone subscription service. As described above, offering ATV viewers an enhanced program option such as an integrated

(continued...)

II. THE POLICIES WARRANTING MANDATORY UNIVERSAL BROADCAST CONVERSION TO ATV MAY IN TIME ALSO MANDATE UNIVERSAL ATV RECEPTION CAPABILITY

In the Notice, the Commission seeks comment on the whether, and if so, and at what point, during the transition to ATV, it should mandate that all receivers be capable of receiving ATV. Notice, at ¶ 81.

The Commission has determined that local broadcast ATV is in the public interest and that the local broadcast system must at some point convert to ATV transmissions. MSTV believes that the policy reflected in these determinations and in both the Communications Act and the All-Channel Receiver Act[8/] favoring the maintenance of a viable and universally available local broadcast system may compel the Commission to mandate universal ATV receiver capability at some juncture. Given the uncertainties in the current ATV development marketplace, however, MSTV believes it appropriate for the Commission periodically to revisit the timing and implementation of adopting such requirement beginning at its first "reconsideration window" three years after adoption of an ATV standard.

[7/](...continued)
sports data base on a subscription basis should not be construed as use of the ATV conversion channel to provide a stand-alone subscription service. In this situation, viewers would be able to receive the basic program without any subscription.

[8/] See The All-Channel Receiver Act, Pub. L. No. 87-529, 76 Stat. 150 (1962) (codified at 47 U.S.C. § 303(s) (1990)).

A. The All Channel Receiver Act Grants The Commission Authority To Mandate Universal ATV Receiver Access

The All Channel Receiver Act ("ACRA") provides that the Commission shall "[h]ave authority to require that the apparatus designed to receive television pictures broadcast simultaneously with sound be capable of adequately receiving all frequencies allocated by the Commission to television broadcasting when such apparatus is shipped in interstate commerce, or is imported from any foreign country into the United States, for sale or resale to the public."[9/] As MSTV has observed in earlier comments, the plain language of the statute, encompassing as it does, "all frequencies allocated to television broadcasting", would appear to encompass ATV broadcast channels. See Reply Comments of MSTV, at 28-29 (August 17, 1992).

To be sure, Congress did not -- indeed could not -- have considered the advent of ATV when it passed the ACRA. ACRA's target was, of course, the slow growth of UHF broadcasting. The UHF problem arose out of the initial reliance on VHF station allocation.[10/] Despite the Commission's best efforts to launch successfully UHF broadcasting, UHF spectrum remained disproportionately

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9/ 47 U.S.C. § 303(s) (1990).

10/ See S. Rep. No. 1526, 87th Cong., 2d Sess., reprinted in 1962 Code Cong. & Admin. News 1873, 1874-75 ("Report").

underutilized relative to VHF spectrum. Many new UHF broadcasters were unable to sustain their enterprises because of the inadequate viewer base.[11/] Both the Commission and the Congress agreed that the "root cause" of the problem was "the lack of television receivers capable of receiving UHF signals."[12/] Very few receivers either available in the market place or in viewers' homes had the capacity to receive UHF broadcast signals.[13/] In 1962, "[t]he practical effect of [the] scarcity of all-channel receivers [was] clear: It prevent[ed] effective competition between UHF and VHF stations which operate[d] in the same market."[14/]

B. Both Market Forces And ATV Conversion Policy May Compel Mandatory ATV Receiver Capability.

Many parallels may emerge between the status of UHF broadcasting in 1961 and the status of ATV at the time stations are required to construct their ATV facilities. Market forces similar to those that stymied UHF development may hamper the development of ATV broadcasting. Indeed, the

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11/ Although most available broadcast frequencies were in the UHF band, existing broadcasters were highly focused in the VHF band. Thus, in 1962, there were only 103 UHF stations in operation, even though there were approximately 1,544 UHF channels available for television broadcasters. By contrast, there were 681 available VHF channels, 500 of which were in use by incumbent broadcasters. Id. at 1876.

12/ Id. at 1876.

13/ See id. at 1874-75.

14/ Report, at 1875.

problems may be even more acute. Finding advertisers who wish to purchase commercial time on ATV broadcasts may initially be very difficult if only a fraction of the homes in a given broadcast viewing area are capable of receiving ATV broadcasts, and the Commission has decided that broadcast ATV service may not be subscription in nature.[15/] At the same time, building and maintaining an ATV broadcasting station will require tremendous capital expenditures. If advertisers are unwilling to purchase time on ATV broadcasts, then ATV broadcasting will have great difficulty surviving commercially. As the record in this proceeding demonstrates, there is good reason to expect that without mandated ATV-capable receivers, initial ATV-receiver household penetration may be both weak and slow.[16/] As MSTV has argued, significant penetration of ATV receivers is essential to provide ATV

[15/] Notice at ¶ 75.

[16/] See Darby, "Implementation of Broadcast High Definition Television: Costs, Burdens, and Risks," at 29-32 (MSTV submitted the Darby Study to the Commission on July 17, 1992 incident to the Commission's Second Report and Order/Further Notice of Proposed Rule Making, 7 F.C.C. Rcd. 3340 (1992) ("Second Notice")) ("Darby Study"). The Darby Study found that it might take as long as ten years before significant numbers of consumers began purchasing ATV receivers. Id. at 29. An NTIA Study noted that "the market [for ATV receivers] simply may not materialize, as was the case with the picture phone, videotext, and a host of other failed consumer products." Larry F. Darby Associates, "Economic Potential of Advanced Television Products," at 31 (April 17, 1988), reprinted as Appendix C to the Darby Study ("NTIA Study").

provide ATV broadcasters with a realistic opportunity to achieve commercial viability.[17/]

Ultimately, if the ATV marketplace resembles the NTSC-UHF experience, thereby favoring mandatory ATV receiver capability the policy reasons would be even more compelling than in 1961. To begin with the Commission has found that ATV itself is in the public interest. Tentative Decision and Further Notice of Inquiry, 3 FCC Rcd. 6520, 6521 (1988). It has also found 1) that the local broadcast system provides a unique array of benefits to the American people, id. at 6525, and 2) that without the capability of providing ATV, there is a danger that this uniquely beneficial system will become a second-class service. Notice of Inquiry, 2 FCC Rcd. 5125, 5125 (1987). These findings are grounded firmly in Section 307(b) of the Communications Act and are analogous to the Commission's determination that increasing the number and viability of UHF stations was essential to the full development of the local broadcast system.

But here the Commission has gone much further: it has declared that the entire local broadcast system must convert to ATV transmissions and must completely abandon NTSC transmissions within 15 years. Moreover, unlike the home

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17/ See MSTV Petition for Partial Reconsideration, at 6-7, 13-14 (June 22, 1992); Joint Broadcaster Comments, at 19-20 (July 17, 1992); see also Darby Study, at 29-31.

video market in 1961, broadcasters today are subject to vigorous competition from other home video suppliers, including cable, wireless cable, VCRs and, soon, true DBS, none of which face any sort of mandate to convert to ATV and all of which, presumably, will continue to supply the NTSC market long into the future.

The Commission has also mandated an aggressive ATV broadcast implementation scenario with accelerated application/construction periods and fixed simulcasting and conversion deadlines, which hypothesizes that broadcasters are to be "market leaders" in the implementation of ATV. Notice, at ¶ 20. Whatever the appropriateness of such a policy, it can scarcely be doubted that because broadcasters are to be "in the vanguard" of ATV implementation, they will face substantial developmental and competitive risks. [18/]

MSTV has argued that this policy of utilizing broadcasters to promote the introduction to ATV goes beyond the scope of the Commission's initial salutary objective in this proceeding and exceeds that clear statutory mandate of

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[18/] The Darby Study found that the probable household "take-up" rate of ATV receivers could not yet be predicted. Darby Study, at 20. However, a study conducted for NTIA concluded that it might take up to seven years for ATV receivers to achieve 1% market penetration under an optimistic scenario. See NTIA Study, at 33, 36. ATV broadcasters will be hard pressed to subsidize ATV program operations for seven years or more. Obviously, the early "take-up" rate of ATV receivers will be significantly improved if the Commission mandates dual-mode receivers during the transition period.

assuring that the local broadcast system has the opportunity to compete in the new ATV environment. MSTV has also argued that the specific timetables adopted initially could well slow or even threaten the introduction of broadcast ATV.[19/] The Commission has responded to these concerns by declaring that it will revisit and fine-tune the construction period, simulcast and conversion timetables in three-year increments following the adoption of an ATV standard. Notice, at ¶¶ 19, 53-54, 71.

But regardless of its action on these timetables, the Commission's core decision to mandate the conversion of the local broadcast system to ATV carries the logical corollary of universal ATV receiver capability. If the policies reflected in the Communications Act and the All-Channel Receiver Act warranted mandatory universal receiver capability to assure the viability of the UHF stations alone, a fortiori they would require mandatory universal receiver capability if the viability of the entire local broadcast system is at stake.

C. Implementation Issues

As the Commission begins to assess the ATV marketplace, compelling reasons for mandating universal ATV receiver capability may emerge at some juncture. Indeed,

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19/ MSTV Petition for Partial Reconsideration, at 3-4, 14-15 (June 22, 1992).

there is a strong case to be made for requiring universal ATV receiver capability no later than the initiation of mandatory ATV broadcasts which, at this point, is to be no later than six years after adoption of the standard.

MSTV also recognizes, however, that there are other important issues concerning the timing and nature of implementation of such a requirement. The most significant variable is the relative cost of the ATV-capable receiver. While all estimates assume substantial productions economies, the incremental cost of this receiver seems likely to remain substantial for a considerable period of time and will, in any event, likely represent a far greater incremental cost than did the "UHF-ready" sets of 30 years ago. And the relative cost of ATV capability may vary substantially with respect to receiver size, representing a much smaller proportion of large screen sets, while remaining prohibitively large for smaller sets for many years to come.

The magnitude of the uncertainties surrounding the timing and nature of the introduction of ATV warrants informed and deliberate decision-making regarding the exercise of power under the All-Channel Receiver Act, just as caution is warranted in setting other implementation timetables. It would seem appropriate to consider this issue as part of the same process which the Commission has established for the reevaluation of its construction period, simulcast and

conversion determinations. Accordingly, three years after the adoption of an initial ATV standard, the Commission should also seek comment upon the need to implement a mandatory universal ATV receiver capability.[20/]

CONCLUSION

The Commission should approach definitional issues relating to ATV broadcast programming in a careful, deliberate fashion. The Commission should adopt flexible definitions for ATV programming, primary service, and ancillary service until the possibilities ATV broadcasting presents are better understood.

The Commission should mandate dual-mode all-channel NTSC/ATV receivers as soon as is practicable, and in any event prior to the beginning of mandatory ATV broadcasting. The absence of receivers capable of receiving ATV broadcasts in a

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[20/] The policies underlying the All-Channel Receiver Act are also implicated by the prospect that some manufacturers would prematurely seek to distribute ATV-only receivers, potentially disenfranchising viewers of stations that had not yet converted to ATV. In this instance, however, the marketplace incentives for continuing to service the vast bulk of the viewing audience, combined with relatively modest incremental cost of adding NTSC capability to ATV sets (see Zenith Comments (December 21, 1992) at 5 - estimating that adding NTSC to ATV sets will cost $50-100), make it very unlikely that ATV-only sets will be distributed for quite some time. Nevertheless, at the initial three-year review period, the Commission should also investigate the possibility that it may need to mandate for some period of time that all receivers be dual-mode, NTSC/ATV.

substantial portion of the viewing audience will create an unnecessary impediment to the implementation of ATV television broadcasting.

Respectfully submitted,

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January 7, 1993